

AGC/WSDOT Structures Team Minutes December 1, 2006

Members

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¹ WSDOT

Guests

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The meeting started at 09:15.

1. Constructibility Review of I-5 Deck Overlay and Joint Replacement Br 5/539E

Personnel from WSDOT Northwest Region described the project and requested Contractor input on the planned construction sequence. The sequence incorporated suggestions from the Jun 06 meeting of this team. Draft lane configuration plans were provided to the group for discussion and collected afterward.

Project details include:

- Work is on northbound (NB) lanes of BR 5/539E between Spokane St I/C and I-90 I/C in Seattle
- Work will be conducted during a 19 day continuous closure divided into 2 stages where NB lanes will be shifted to median and SB lanes
 - i. Stage 1: 9 day duration with 3 lanes open
 - ii. Stage 2: 10 day duration with 2 lanes open; NWR will model traffic flow to determine if it is acceptable to have only 2 lanes open for this stage
- Options for overlay material and expansion joints are rapid set latex modified concrete (LMC) or polyester concrete
- 33 expansion joints for total of 2162 linear feet of joint
- 400,000 square feet of deck overlay (5.2 total lane miles)
- Exit to I-90 will be closed for a weekend
- The State's model shows need for 5 crews consisted of 7 workers reconstructing the joints
- Plan to use same material for expansion joint headers and overlay
- The State will assume weather related delay risks associated with the use of polyester
- Bid opening in early April, with work schedule for August
- WSDOT will conduct repair of expansion joint located at off-ramp on SB lanes; this work will be published as representative of NB lane joints
- Noise shields are required
- Car traffic will be slowed to 40 mph; bus traffic will be rerouted
- Liquidated damages is approximately \$100,000 per day
- Incentives for early completion is \$100 K/day up to \$500 K

Team discussion around the work included the following points:

- Mark Rohde discussed disadvantages in time and effort for the rapid set LMC overlay option; he was not concerned with LMC for the expansion joint headers
- Overlay material estimates is a concern since procurement of additional aggregates will be difficult. Region will measure and include rut depths in the contract.
- For information of typical accelerated construction, CBI paved 1500 linear feet of Ravenna Bridge in 17 days
- Expansion joints were agreed to be the main and most difficult component of work and there was lengthy discussion about the need to understand time and details of joint replacements before sequencing is finalized
- Contractors were not overly concerned with staging location, but had concerns about truck access between the work and staging/suppliers
- DBE goals seem unrealistic for this project based on limited Contractors able to do the work and limited scope of tasks other than overlay and joints; possible DBE work includes barrier placement, debris removal, and traffic control; however, these items will not add up to the statewide goal of 18.66%.
- Include option for other modified concrete overlays and let construction schedule dictate feasibility of materials other than LMC and polyester

- Consider allowing different materials for overlay than is used for expansion joint headers
- Ensure that header design accounts for any increase in thickness of the deck due to new overlay; draft plans indicated an expansion joint design that was based on constant deck thickness
- Any weather delays will extend the project into labor day weekend
- Concern that union halls will not have adequate skilled staff for 19 days during peak construction season
- Provide the paint lead content of the existing expansion joint steel in the contract

The team recommended the following items be considered in the final design and construction sequence:

- Require Contractors to have minimum amount of extra materials available to preclude material shortages in the event of overrun due to potential further deck preparation
- Allow further deck preparation before 19 day closure
- Stop working days on other projects to allow rapid mobilization of adequate manpower and to prevent conflict with nearby work on other highway projects
- Conduct test joint to evaluate required effort and accuracy of as-built drawings
- Allow other materials for overlay than rapid set LMC and polyester

Action Item: No further action by team.

2. Approval of October Meeting Minutes

No exception was taken with the meeting minutes.

Action Item: No further action by team.

3. AGC Lead Team News

Mohammad Sheikhezadeh informed the group that they will have two presentations at the annual AGC meeting to be held at the Fircrest Golf Club from 08:30 – 20:30 4 January 2007. Obayashi will present the Tunneling at Beacon Hill for Sound Transit's Light Rail Link. Tobin Smith will present issues with water treatment for the bridge deck at Keys Road.

Mo handed out a WSDOT document prepared for the Washington Asphalt Paving Association (WAPA) that provided the following data summaries:

- Construction Cost Indices
- Prime Contractor's Market Shares Above 1%
- WSDOT Hot Mix Asphalt, Crude Oil & Diesel Fuel Indices
- Contract Award to Estimate with Average Number of Bidders per Month
- WSDOT's Apprenticeship Utilization Program

Mo also provided a draft special provision for fuel cost adjustment. Team discussed effects on price escalation as well as price decrease, multi-season, and greater than 150 day work, and methods to determine fuel costs with Subcontractors. WSDOT has determined that the fuel uses are difficult to track and that potential fuel rebates back to WSDOT would be unpopular and has tabled this provision.

Mo informed the team that an updated Gray Notebook (WSDOT Measures, Markers and Mileposts), for the quarter ending 30 September 2006, was available on the WSDOT website.

Action Item: Team attendance is requested at the Annual Meeting 4 January 2007.

4. Concrete Consolidation under Prestressed Girder Flanges at Intermediate Piers

This topic was introduced at the October meeting and team members were requested to evaluate their concerns and provide recommendations for a detail or practice to minimize the difficulty of constructing the diaphragm beneath deeper girder bottom flanges around and in front of supporting oak blocks.

General discussion included the following issues:

- Primary concern expressed by team was access in front of the oak blocks
- Jugesh Kapur reiterated the designers view that there is no rotation due to live loadings at this location and that this location could therefore be filled with a non-structural material as long as it was aesthetically acceptable, durable, and prevented bird access
- Members suggested three primary solutions:
 - i. Dry pack concrete into the void after the diaphragm is placed – this is the preferred solution
 - ii. Fill void with compressible material such as structural foam – discussion indicated this option is not adequate for permanent installation due to concerns about durability and eventual spalling
 - iii. Support girder on grout pad (photo provided) – Jugesh explained concern from designers that this could result in undesirable permanent point load support of the girders
- Members requested WSDOT add a note to standard drawings indicating that the location could be filled with non-structural material. Members explained that local agencies using WSDOT details were not as familiar with the detailing and would benefit from this notation.

Action Item: Bridge office will modify notes on future plans to allow dry-packing concrete under girder flanges in front of the oak blocks and the associated construction joint with the diaphragm.

5. Lessons Learned from Fog Curing Bridge Decks at Keys Road

To answer questions raised during previous discussion of this project, Mo visited the bridge and measured frequency of deck cracking. He found that the fog cured deck exhibited no significant difference in cracking frequency when compared to the

conventional cured deck. Mo noted that this information would be used to assist in planning an upcoming WSDOT research project to evaluate shrinkage cracking in bridge decks. Discussion also covered recent shortages of class F fly ash due to closure of Centralia, WA mines and consequent import of coal from Montana which is resulting in production of class C fly ash henceforth.

Action Item: No further action by team.

6. Update to WSDOT Std Spec 6-02.3(17)N Removal of Falsework and Forms

Jesse Beaver presented proposed corrections to required minimum compressive strength and concrete age prior to formwork removal. The corrections clarified several outstanding terminology inconsistencies and resulted in no significant change to required formwork removal practices. Members briefly discussed the changes and re-familiarized themselves with the tabulated values. There were no disagreements with the proposed changes.

Action Item: WSDOT HQ Construction will incorporate the changes as amendment to the Standard Specifications.

7. Update to WSDOT Std Spec 6-09.3(6) Further Deck Preparation

Discussion on this topic was deferred to the following meeting.

Action Item: Future agenda item will allow team discussion of WSDOT procedures for further deck preparation.

8. Update to WSDOT Std Spec 2-03.2 Temporary Excavations & 2-09.3(3)B Excavation Using Open Pits – Extra Excavation

Mo provided a handout with revised standard specification. Revision included addition of new Section 2-03.2 and modification of open pit excavation in Section 2-09.3(3)B. Discussion of the changes was deferred to the next meeting to allow members to review the handout.

Action Item: Future agenda item will allow team discussion of WSDOT proposed changes for temporary excavations. Mo will email changes to team members.

9. Changes to Special Provisions for Drilled Shaft Obstruction Removal Payment

To represent this team, Scott Ayers and Mo attended the 26 Oct 06 WSDOT/ADSC meeting. Scott and Mo provided a summary of the ADSC discussion, including the following points:

- Drilled Shaft Contractors had varied opinions between them with no clear consensus to change the existing procedures
- Discussion indicated that several of the options presented as new procedures would re-introduce problems that were solved when the current provisions were initially incorporated

- General agreement was that the existing system has flaws, but is generally fair and keeps liability for unknown conditions with the owner
- ADSC members believe that some type of standardized pre-negotiated rates based on equipment set and shaft diameter may be appropriate and that WSDOT HQ Construction (Mo) is the appropriate agency to determine these rates
- Scott explained General Contractors' view that the existing Force Account system was preferred to any of the options currently under discussion

Action Item: Mo will continue to collect rates from ADSC members on their equipment and will attempt to set fair pre-negotiated rates for obstruction removal based on equipment and shaft diameter.

10. Discussion on How WSDOT Can become the Owner of Choice

Mo requested team feedback, based on topic handout provided at a previous meeting. Team suggestions included the following:

- Enforce consistent enforcement of contract between different WSDOT Project Engineers and Inspectors
- Evaluate all material submittals for any certifications and tests that may be redundant to reduce unnecessary paperwork
- Educate construction field staff on WSDOT specifications to encourage consistent interpretation
- Significance of attitude and working relationship skills of the PE towards the contractor from day one
- Professionalism provided by WSDOT is valued by Contractors
- Caltrans has initiated meetings with AGC similar to WSDOT as a result of WSDOT success – use of these valuable forums should continue
- Team questioned whether value of advertised contracts affects number of bidders
- WSDOT partnering policies are appreciated
- Consider higher pay for WSDOT Project Engineers in higher cost of living regions to encourage longer tenure and retention; Contractors explained that rapid turnover in locations like King County decreases quality of interaction between WSDOT and Contractors

Action Item: WSDOT HQ Construction will discuss issues presented above and work to make changes where possible and will report these changes or lack thereof back to the team.

The next meetings are scheduled for **26 Jan 07, 2 Mar 07, 6 Apr 07, and 18 May 07.**